AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Currently amended): MSM type photo-detection device designed to detect incident light and comprising:

a support;

reflecting means superposed on a first face of [[a]] the support to form a first mirror for a Fabry-Pérot type resonant cavity[[,]];

a layer of material that does not absorb ~~said~~ the incident light, the layer of material being disposed on the reflecting means,

an active layer made of a semiconducting material absorbing incident light, the active layer being disposed on the layer of material that does not absorb the incident light, and

a network of polarization electrodes collecting the detected signal, the electrodes network being arranged on the active layer, ~~the electrodes network being~~ and composed of parallel conducting strips at a uniform spacing at a period less than the wavelength of incident light, ~~the electrodes network forming a second mirror for the resonant cavity,~~ wherein the light to be detected is incident onto the device through the electrodes network ~~forming the second mirror~~, the geometric dimensions of the conducting strips being determined to form a second mirror for the Fabry-Pérot type resonant cavity at the interface between the electrodes network and the active layer, ~~the optical characteristics of this second mirror being determined by the geometric dimensions of said conducting strips,~~ the distance separating the first mirror from the second mirror being determined to obtain a Fabry-Pérot type resonance for incident light between these two mirrors.

Claim 2 (Original): Photo-detection device according to claim 1, wherein the reflecting means forming a first mirror are composed of a Bragg mirror.

Claim 3 (Previously Presented): Photo-detection device according to claim 2, wherein the Bragg mirror is composed of alternating layers of AlAs and AlGaAs and alternating layers of GaInAsP and InP or alternating layers of AlGaInAs and AlInAs or alternating layers of AlGaAsSb and AlAsSb.

Claim 4 (Original): Photo-detection device according to claim 1, wherein the reflecting means forming a first mirror are composed of a metallic layer.

Claim 5 (Original): Photo-detection device according to claim 4, wherein the metallic layer forming the first mirror provides a silver, gold or aluminium surface to incident light.

Claim 6 (Original): Photo-detection device according to claim 1, wherein the reflecting means forming a first mirror are composed of a multilayer dielectric mirror.

Claim 7 (Original): Photo-detection device according to claim 1, wherein the layer of material that does not absorb light is made of AlxGa1-xAs and the active layer is made of GaAs.

Claim 8 (Original): Photo-detection device according to claim 7, wherein x is of the order of 0.35.

Claim 9 (Original): Photo-detection device according to claim 1, wherein the layer of material that does not absorb light is made of AlInAs and the active layer is made of InGaAs.

Claim 10 (Original): Photo-detection device according to claim 1, wherein the electrodes network forms two interdigitated combs.

Claim 11 (Canceled)

Claim 12 (Original): Photo-detection device according to claim 1, wherein the conducting strips are made of silver or gold or aluminium.

Claim 13 (Original): Photo-detection device according to claim 1, wherein a passive layer of dielectric material is deposited on the electrodes network.

Claim 14 (Original): Photo-detection device according to claim 13, wherein the passivation layer is made of silicon dioxide or silicon nitride.

Claim 15 (Original): Photo-detection device according to claim 1, wherein a second face of the support supports an electrode to apply an electrical field to the device to change the resonant wavelength of the resonant cavity by the opto-electric effect.

Claim 16 (Currently Amended): MSM type photo-detection device designed to detect incident light and comprising reflecting means superposed on a first face of a support to form a first mirror for a Fabry-Pérot type resonant cavity, a layer of material that does not absorb said light, an active layer made of a semiconducting material absorbing incident light and a network of polarization electrodes collecting the detected signal, the electrodes network being arranged on the active layer, the electrodes network being composed of parallel conducting strips at a uniform spacing at a period less than the wavelength of incident light, the electrodes network forming a second mirror for the resonant cavity, wherein the light to be detected is incident onto the device through the electrodes network, the optical characteristics of this second mirror being determined by the geometric dimensions of said conducting strips, the distance separating the first mirror from the second mirror being determined to obtain a Fabry-Pérot type resonance for incident light between these two mirrors, and wherein the distance separating the first mirror from the second mirror is ~~equal to or less than about 100~~ in the range of about 70 nanometers to about 90 nanometers.

Claim 17 (Currently Amended): Photo-detection device according to claim ~~16~~ 18, wherein the ~~distance separating the first mirror from the second mirror~~ thickness of the active layer is equal to or less than is equal to or less than about ~~70~~ 40 nanometers.

Claim 18 (Previously Presented): Photo-detection device according to claim 16, wherein a thickness of the active layer is equal to or less than about 50 nanometers.

Claim 19 (Previously Presented): Photo-detection device according to claim 16, wherein the electrodes network is composed of the parallel conducting strips at a uniform spacing at a period equal to or less than about 200 nanometers.

Claim 20 (Previously Presented): Photo-detection device according to claim 19, wherein a width of the parallel conducting strips is equal to or less than about 100 nanometers.

Claim 21 (Previously Presented): Photo-detection device according to claim 16, wherein the electrodes network forms two interdigitated combs, including a first set of the parallel conducting strips electrically connected to a first common contact to form a first comb, and a second set of the parallel conducting strips electrically connected to a second common contact to form a second comb.